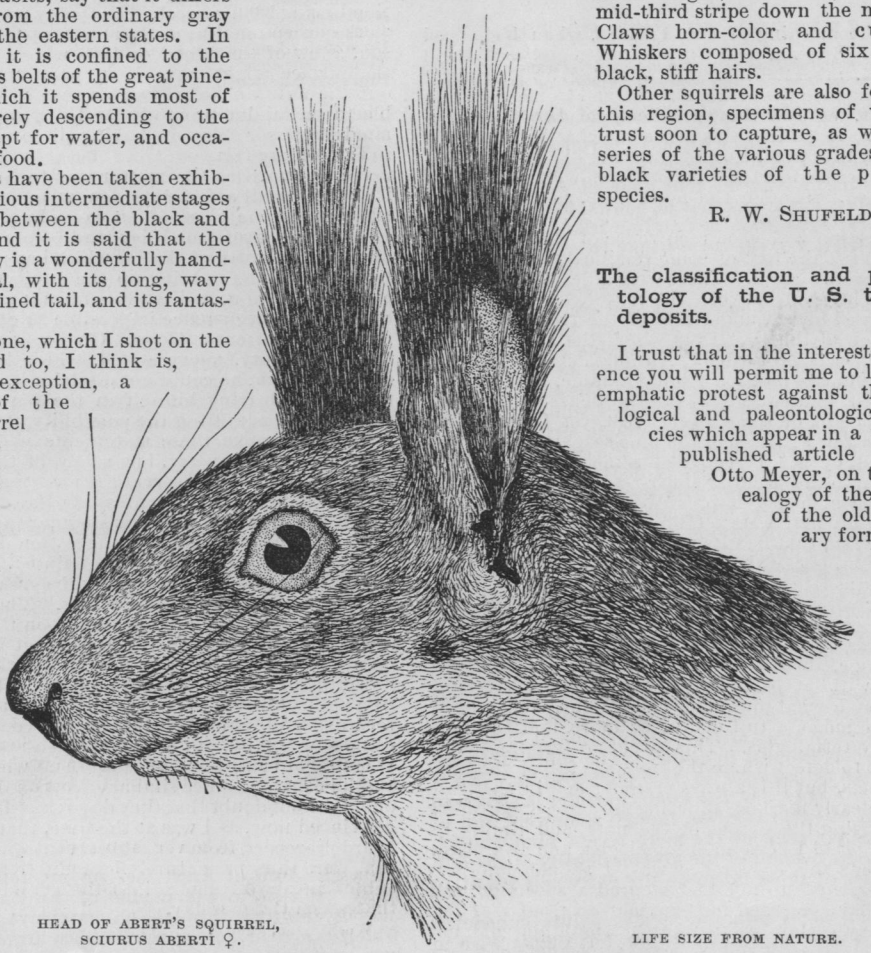
It proved to be a fine female specimen of Abert's squirrel in the gray pelage; and I subsequently learned from others who have hunted them in this locality, where they are by no means abundant, that they are sometimes taken where their fur is of a jetty black, with the tail broadly bordered with snowy white, and perhaps similarly marked on the breast and lower parts.

Old hunters who have had the opportunity of observing its habits, say that it differs but little from the ordinary gray squirrel of the eastern states. In this region it is confined to the mountainous belts of the great pine-trees, in which it spends most of its time, rarely descending to the ground except for water, and occasionally for food.

Specimens have been taken exhibiting the various intermediate stages of coloring between the black and the gray; and it is said that the black variety is a wonderfully handsome animal, with its long, wavy white emargined tail, and its fantastic ear-tufts.

The gray one, which I shot on the day referred to, I think is, without exception, a specimen of the finest squirrel in the fauna of our country. I have no acquaintance with another American species that can compare with it.

I do not remember having seen at any time a drawing of this squirrel: so, after having carefully prepared the skin and skeleton of my specimen, I made the life-size figure of its head which illustrates this letter.



HEAD OF ABERT'S SQUIRREL, SCIURUS ABERTI ♀.

LIFE SIZE FROM NATURE.

From it I also took the following measurements, and description of its external characters and appearance:—

| | Centimetres. |
|---|---|
| Length of body from tip of nose to root of tail, down the back | 35.0 |
| Length of tail | 34.0 |
| Height of ear, including tuft | 6.5 |
| Fore-paw, from inner pad to longest claw | 4.3 |
| Hind-paw, from inner pad to longest claw | 4.8 |
| Tip of nose to anterior canthus of eye | 3.2 |

Entire upper parts of a grizzly, iron gray. Lower halves of inner aspects of ear-tufts, and a median broad stripe from shoulders to near root of tail, of a brilliant chestnut. Ear-tufts large, composed of straight black hairs. Entire under parts, borders of tail, circum-ocular stripe, and upper sides of feet, pure white. A rather broad dividing-line at either side, between the white of under parts and gray above, jetty black. Central hairs of tail, for its entire length, also black, forming a mid-third stripe down the member. Claws horn-color and curved. Whiskers composed of six or ten black, stiff hairs.

Other squirrels are also found in this region, specimens of which I trust soon to capture, as well as a series of the various grades of the black varieties of the present species.

R. W. SHUFELDT, M.D.

## The classification and paleontology of the U. S. tertiary deposits.

I trust that in the interests of science you will permit me to lodge an emphatic protest against the geological and paleontological fancies which appear in a recently published article by Dr. Otto Meyer, on the genealogy of the species of the older tertiary formations.

The article displays such a monstrous disregard or ignorance (or both) of the literature of the subject of which it treats, and so fully betrays the author's misconception of the numerous species that have been described from the region in question, that it would not even call for a protest, were it not for the air of respectability which is given to it by the cover of the *American journal of science*.

Little can and need be said in response to a thesis which maintains that there is not sufficient evidence to prove that the Vicksburg beds overlie the Claiborne sands, and that, as a matter of fact, the latter will be found overlying the former, when not a particle of evidence is brought forward in support of this statement.

I take this opportunity, also, of warning paleontologists against the acceptance of the numerous new species, which, without either description or proper comparison, are claimed by Dr. Meyer.

ANGELO HEILPRIN.

Academy of natural sciences,
Philadelphia, June 3.

### Premature appearance of the periodical cicada.

On the morning of Oct. 12, 1884, when I chanced to be in Virginia, near Clifton station on the Midland railroad, my attention was attracted by hearing at some distance the characteristic, and to me perfectly familiar, note of the periodical cicada (C. septendecim). Regarding this as a somewhat novel occurrence at that time, I decided to investigate it, and at once proceeded in the direction from which the sound emanated. Though the notes were, as usual, interrupted by short intervals, I found it easy to correct my direction with each recurrence of the sound, and was soon at the foot of some small oaks in which the insects were located. There were at least three males, and the interval between the notes was quite short. I stationed myself under one of the trees, and carefully located the spot from which the sound of one of the insects proceeded. Although it was not possible, from any position I could assume, to see the insect itself, hidden as it was in the dense foliage, and at the height of some twenty feet, yet I soon knew within a few square feet the precise part of the tree occupied by it. I remained some fifteen minutes listening to the peculiar murr-r-r-r-r-row with which I had been deeply impressed when a boy (1854 or 1855) in my native state (Illinois) at the time of the great swarm that left its withering blight on all the vegetation, but which I have since heard for days together as late as 1878. I think all who are really familiar with this sound will agree with me that it has no counterpart in the whole range of sound-producing creatures. The body of the note lasts, on an average, about two seconds, upon a uniform key, when, without being interrupted, the pitch rapidly drops, with what musicians call a 'slur,' for, as near as I can judge, a full octave or more, and the note abruptly terminates. This peculiar termination is difficult to detect where the trees are full of the singing insects, but it is always present; and in this case it was clearly marked, affording me a fine opportunity for studying the phases of the note, and timing its length. Had I been an entomologist, and aware how anomalous this occurrence was, I should doubtless have persisted until I had secured a specimen, and should have searched for exuviae, etc.; but as I felt absolutely certain as to what I heard, and did not know but that it might be a somewhat ordinary occurrence, I merely made a note of the facts, and leisurely left the spot.

Several days afterwards, happening to be in conversation with Prof. C. V. Riley, I casually mentioned the circumstance as a fact in his line, fully expecting him to reply that it was no very unusual thing. To my great surprise, he pronounced it impossible, and wholly discredited the accuracy of my observation. He said I must have heard some other species of cicada; and, when I asked him what other species had a note precisely like that of the periodical one, he could do no better than to name the common harvest-fly (Cicada pruinosa), the sharp, shrill note of which was also perfectly familiar to me, and so different that I could no more confound it with the other than I could the chirp of a sparrow with the cooing of a dove. My attempts to convince him by describing the sound were as ineffective as though I had been speaking to one who was himself unfamiliar with it.

Having the courage of my convictions, I made bold, on the first opportunity, to lay the subject before a Washington scientific body in the form of a verbal statement of the case, whereupon the learned professor surprised me, not only by no longer positively gainsaying it, but by propounding a theory according to which he admitted the possibility of my observation having been correct. His theory was, that, owing to the exceptional heat of the latter part of that season, a few of the brood of 1885 which were nearest the surface might have been prematurely brought out the autumn before. This seemed very reasonable to me, and I promptly (and seriously) congratulated Professor Riley on having discovered a theory to explain my fact.

Here I supposed the matter was to rest; and here it did rest until a few days ago, when to my further surprise, at the close of an exceedingly interesting paper which Professor Riley read before the same society, on the brood of cicadas which has just appeared, he took occasion to bring up the subject of my Virginia observation, and to pronounce it utterly worthless, and the occurrence impossible as contrary to all the canons of entomology. On being reminded of his own theory, above stated, which he seemed to have forgotten, he could not disclaim it, and virtually renewed it, leaving himself in the position of both denying and admitting the possibility of the event.

I do not make these statements with a view to arousing a controversy, but solely in the hope that some of your many observant readers may be able to confirm and perfect the confessedly incomplete record which I hereby make of this singular incident.

I will, however, venture a suggestion drawn from a field with which I am better acquainted. The theory of Professor Riley might, I think, be greatly strengthened by facts derived from plants. The effect of a protracted warm spell in autumn upon the vegetation of this climate has been the subject of investigation on my part for a series of years; and the autumnal flowering of strictly vernal species is a fact attested by a score or more of species, most of which have been recorded and published. It is not contrary to the canons of botany, but consonant to a rational understanding of causes and effects. And why should not similar causes produce similar effects on insects? For one, I cannot doubt that they do so; and I am as firmly convinced now, as I was at the time, that the sound I heard proceeded from veritable seventeen-year locusts that were thus prematurely brought from their long subterranean dungeons into the genial sunlight of that warm October day. LESTER F. WARD.

Washington, June 6.

### The recent Chicago storm and the sun-glow.

The telegraph reports a very violent thunder-storm at Chicago during the night of June 2; the lightning striking many buildings, and causing the loss of five lives. I was in Chicago during a part of Monday, June 1. At that time the reddish glow around the sun which I have recently described in your columns, was almost as intense as I have ever seen it even in Colorado. In Colorado any great increase in the depth of tint of the circumsolar glow portends a fall in temperature with conditions favorable for cold electrical storms. The rule would seem to be about the same at Chicago, though the Great Lakes may tend to prevent the formation of hail near them.

G. H. STONE.

Portland, Me.